PRESENT CLAIMS

1. (previously presented) An x-ray therapy system for artifact reduction, the system comprising:

an x-ray source having a data output responsive to an x-ray pulse rate, the data output separate from an x-ray output; and

an imaging device responsive to x-rays from the x-ray source, the imaging device having a scan trigger input connected with the data output.

2. (previously presented) The system of Claim 1 wherein the imaging device comprises a trigger input responsive to a trigger signal synchronized with the x-ray pulse rate.

3. (cancelled)

4. (original) The system of Claim 1 wherein the imaging device comprises a two-dimensional array of photo-detectors and a display.

5. (original) The system of Claim 1 wherein the x-ray source comprises a megavoltage linear accelerator.

6. (original) The system of Claim 1 further comprising an interface circuit connected between the output and the scan trigger input.

7. (previously presented) The system of Claim 6 wherein the interface circuit comprises digital logic operable to generate trigger signals for the imaging device scan trigger input as a function of a x-ray pulse signal, the trigger signals synchronized with x-ray pulses.

8. (original) The system of Claim 1 further comprising a controller, a trigger signal provided to the scan trigger input responsive to a mode signal from the controller, the mode signal indicating one of a low dose mode and a high dose mode, the high dose corresponding to imaging device scanning synchronized with x-ray pulses and the low dose mode corresponding to scanning after the x-ray source ceases an output of x-rays.

9. (previously presented) An interface system for synchronizing an x-ray imaging device with pulses of a x-ray machine, the system comprising:

a low dose circuit responsive to an x-ray source high voltage power-on signal and a radiation-off signal, the low dose circuit operable to generate a first trigger signal in response to the x-ray source high voltage power-on signal and to generate a second trigger signal in response to the radiation-off signal; and

a high dose circuit responsive to a x-ray pulse signal, the high dose circuit operable to generate a third trigger signal synchronized to the x-ray pulse signal.

10. (original) The interface system of Claim 9 wherein the high dose circuit comprises a pulse width circuit operable to generate the third trigger in response to the x-ray pulse signal.

11. (original) The interface system of Claim 9 wherein the low dose circuit comprises first and second pulse width circuits, the first trigger signal responsive to a first pulse width of the first pulse width circuit and the second trigger signal responsive to a second pulse width of the second pulse width circuit.

12. (original) The interface system of Claim 9 further comprising a controller connected with first and second AND gates, the first AND gate connected with the low dose circuit and the second AND gate connected with the high dose circuit.

13. (original) The interface system of Claim 9 further comprising an OR gate connected with outputs of the low and high dose circuits.

14. (previously presented) An interface system for synchronizing an x-ray imaging device with pulses of a x-ray machine, the system comprising:

an input from the x-ray machine separate from an x-ray detector;

a trigger circuit connected with the input; and

an output connected with the trigger circuit, an electronic panel scanning trigger signal to be provided on the output responsive to an input signal on the input.

15. (original) The interface system of Claim 14 wherein the trigger circuit comprises a monostable multivibrator.

16. (original) The interface system of Claim 14 further comprising a controller connected with an AND gate, the AND gate connected with the trigger circuit and the output.

17. (previously presented) A method for artifact reduction in an x-ray therapy system, the method comprising:

(a) generating a sequence of dosage x-ray pulses and a signal with an x-ray machine;

(b) imaging in response to the dosage x-ray pulses during (a); and

(c) synchronizing (b) with the dosage x-ray pulses as a function of the signal being input to an imaging device.

18. (original) The method of Claim 17 wherein (b) comprises scanning a plurality of images in response to a respective plurality of trigger signals and (c) comprises generating the plurality of trigger signals as a function of beginnings of the x-ray pulses.

19. (original) The method of Claim 18 wherein (c) comprises generating the plurality of trigger signals as a function of less than all of the beginnings of the x-ray pulses.

20. (previously presented) The method of Claim 17 further comprising:

(d) identifying a linear artifact;

(e) gain correcting images of (b) as a function of a one-dimensional line associated with the linear artifact.

21. (original) The method of Claim 17 wherein (a), (b) and (c) comprise operating the dosimetric system in a high dose mode, the method further comprising:

(d) operating the dosimetric system in a low dose mode:

(d1) generating an x-ray pulse of less dosage than the x-ray pulses of (a);

(d2) imaging after (d1).

22. (previously presented) A method for artifact reduction in an x-ray therapy system, the method comprising:

(a) generating an image with linear pulse intensity artifacts; and

(b) gain correcting the image as a function of a line with a gain correction image, the line associated with the linear pulse artifact.

23. (original) The method of Claim 22 wherein (a) comprises synchronizing scanning of a two-dimensional panel with x-ray pulses.

24. (original) The method of Claim 22 wherein (b) comprises increasing a gain of image lines free of the linear pulse artifacts.

25. (original) The method of Claim 22 wherein (b) comprises decreasing a gain of image lines corresponding to linear pulse artifacts.

26. (original) The method of Claim 22 wherein (a) comprises generating the image from a plurality of other images.

27. (original) The method of Claim 22 further comprising:

(c) measuring a quantity from data corresponding to the image.

28. (previously presented) A method for controlling imaging in an x-ray therapy system, the method comprising:

(a) generating low dosage x-ray radiation, the low dosage adapted for verifying patient position;

(b) preparing an x-ray source for (a); and

(c) triggering a scan of an electronic portal imaging device prior to (a) in response to (b).

29. (original) The method of Claim 28 further comprising:

(d) avoiding scanning of the electronic portal imaging device during (a).

30. (original) The method of Claim 28 further comprising:

(d) delaying scanning of the electronic portal imaging device for a time period after x-ray radiation of (a) ceases; and

(e) scanning the electronic portal imaging device after the delay of (c).

31. (cancelled)

32. (cancelled)

33. (cancelled)

34. (previously presented) A method for controlling imaging in an x-ray therapy system, the method comprising:

(a) generating low dosage x-ray radiation, the low dosage adapted for verifying patient position;

(b) avoiding scanning of a electronic portal imaging device during (a); and

(c) scanning the electronic portal imaging device after (a).

35. (original) The method of Claim 34 further comprising:

(d) delaying (c) for a time period after x-ray radiation of (a) ceases.

36. (original) The method of Claim 34 further comprising:

(d) scanning the electronic portal imaging device prior to (a).